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International fisheries commission
A message from the President
transmitting a report.

1911



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International fisheries commission (U.S. and Gt. Br.)

INTERNATIONAL FISHERIES COMMISSION.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A REPORT FROM THE AMERICAN MEMBER OF THE INTERNATIONAL FISHERIES COMMISSION.

FEBRUARY 10, 1911.—Read, referred to the Committee on Foreign Affairs, and ordered to be printed.

To the Senate and House of Representatives:

On the 2d of February, 1910, I submitted to Congress "A system of uniform and common international regulations for the protection and preservation of the food fishes in international boundary waters of the United States and Canada" in order that due legislative action on the part of the Government of the United States may be taken, as stipulated in article 3 of the convention of April 11, 1908, between the United States and Great Britain on the subject. The attention of Congress was again called to the subject in my annual message of December 6 last.

I now transmit a report from the American member of the International Fisheries Commission, furnishing further information in explanation of the value of the regulations and as to certain modifications which have been proposed and showing the importance of early action by Congress. He calls attention to the fact that the fisheries embraced in the regulations are among the most important in the world, and that they can be adequately protected only by the joint action of the two Governments. I can not too strongly urge upon Congress the importance of taking prompt action to put into operation the conservation measures provided in the regulations and to which this Government is pledged by treaty stipulation.

WM. H. TAFT.

THE WHITE HOUSE, February 10, 1911.

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1911

DEPARTMENT OF STATE,
Washington, February 7, 1911.

The PRESIDENT:

I have the honor to transmit herewith a report from David Starr Jordan, the American member of the International Fisheries Commission, furnishing further information as to the action of the commission and explanations of the regulations which were transmitted by you to Congress with your special message of February 2, 1910. In my letter to you of January 31, 1910, accompanying the regulations, I made such explanations as I deemed requisite for a full understanding of this important subject.

In transmitting this report I do not consider it necessary to do more than to recommend that Congress be urged to take as prompt action on the subject as possible, for the reason that we are committed to such action by treaty stipulation and that further delay is exposing this valuable industry to continued depletion. The report shows that certain modifications which the fishermen of the United States desire to have made in the regulations have been proposed to the commission with the view of having them adopted by the two Governments.

Respectfully submitted.

P. C. KNOX.

INTERNATIONAL FISHERIES COMMISSION,
Stanford University, Cal., January 28, 1911.

DEAR SIR: I beg to present to you the following report on the work of the International Fisheries Commission:

On April 11, 1908, a treaty or convention between Great Britain and the United States, concerning the fisheries in the boundary waters of the United States and Canada, was signed by Messrs. Elihu Root and James Bryce and approved by the President and the Senate of the United States.

This treaty made provision for the unification of the fishery statutes of the United States and Canada, so far as these concern the boundary waters, and for propagation of food fishes and other measures for the enhancement of fishery interests in the region concerned.

This work was placed in the hands of two commissioners, one from each nation. On July 1, 1908, Mr. Samuel T. Bastedo was appointed commissioner for Canada and David Starr Jordan commissioner for the United States. In December, 1908, Mr. Bastedo tendered his resignation, and Edward Ernest Prince, commissioner of fisheries for Canada, was appointed international fisheries commissioner in his place.

The joint report of the two commissioners, involving 66 regulations for the protection of the fisheries in the treaty waters, was signed on May 29, 1909.

This report involves conservation measures of the greatest importance because attainable in no other way. The fisheries of the Great Lakes and Puget Sound rank with the most important in the world. These waters are traversed by the international boundary. The fishes pass from side to side across this boundary. They can be protected only through joint action of the Governments concerned. Such joint action in the machinery of nations is attainable only by

Feb 78, 1911,
U. S. M. N.
treaty. In a treaty the nations, not the individual States or Provinces, must be the contracting parties.

In a series of regulations covering such a vast extent of territory with varied products and varied interests it is unavoidable that the first draft should be incomplete. Many matters demand the test of experience, and some desired results can be reached in several different ways. For these reasons the treaty contains the wise provision that the regulations may be amended at any time at the instance of the international fishery commissioners.

While the commissioners hold themselves ready to examine every complaint and to make all necessary amendments, it is believed that at the present time but few such amendments are necessary, and those which have been agreed upon by the commission or proposed by me to my Canadian colleague are set forth elsewhere in this report.

It is recommended that the regulations take effect on January 1, 1912. It is necessary to give the fishermen one season to use their old nets, and the change should take place in midwinter, at which time there is no fishing in treaty waters.

The following comments on the individual regulations may be found useful:

General regulations: The general regulations 1 to 17 for the most part explain themselves and have not been subjects of criticism. No. 5, as to pollution of waters, is of special importance and is still frequently and grossly violated by establishments of various kinds near the treaty waters, but for the most part not actually situated on them. No. 10, prohibiting fishing under the ice, may require modification if found to work undue hardship in northern waters. No. 11, as to commercial fishing for game fishes, is of special importance to the angler. No. 12, prohibiting the capture of immature salmon, is especially important on the Pacific coast, as these young fish are often taken in nets and sold as "sea trout." It should be noted, however, that the humpback salmon is sometimes mature at 3 pounds weight. No. 14, prohibiting the killing of sturgeon, offers the only possibility of saving this most valuable fish, the five species of which are all very nearly exterminated in American waters.

Passamaquoddy Bay: It may be noted that in referring to "the territorial waters of Passamaquoddy Bay" the treaty does not define the extent of the bay. There are other boundary waters adjacent to this bay, as Lubec Narrows and Menan Straits, which are not technically parts of Passamaquoddy Bay. It would be convenient if the application of the treaty could be extended so that the two counties, Charlotte, in New Brunswick, and Washington, in Maine, were included under the same provisions. No. 13, protecting spawning grounds of herring, has no application if the treaty waters are limited rigidly to the bay in question. Such spawning grounds exist about Grand Menan Island.

In No. 19 no attempt is made to settle the vexed question as to whether seines shall be used in the capture of young herring to be canned as "sardines." This matter concerns the relative interest of different classes of fishermen, but it is not vital to the fisheries. We find no evidence that the herring in these treaty waters have suffered from overfishing. In the last clause an attempt is made to prevent the waste of "smothering" when seines full of small fish are drawn on shore.

It is probable that No. 20 should go still further, prohibiting the killing of salmon by any other means than by hook and line.

No. 21. This regulation had in view only the large purse nets, such as might be used for the capture of pollack and other fish of the open waters. It was not designed to prevent the substitution of small purse nets for seines in the emptying of weirs. In framing this regulation it was understood that the contents of a weir become private property, to be taken out as the owner pleases.

Nos. 22 and 23, prohibiting the sale of short lobsters or of female lobsters, are both very important, as the lobster has suffered much from overfishing. In this and in many other cases the local statutes on one or both sides of the boundary have been made to coincide with the regulations of the commission.

No. 25, defining the close season for lobsters, represents the best knowledge of the commission. It may be subject to amendment, should a different limit, on trial, be found preferable.

Nos. 26, 27, and 28 concern the salmon in the St. Croix River. It will doubtless be found necessary to forbid the use of weirs and nets for the capture of salmon. As that part of the St. John River which is boundary water contains no food fish of importance except trout, no special regulations are necessary. The lower part of the St. John, passing through the middle of New Brunswick, is apparently not within the scope of this treaty.

Lake Memphremagog is reserved for anglers only, the net fishing being unimportant.

In Lake Champlain the yellow pike is the chief fish sought by anglers. It is believed that this species receives adequate protection from the exclusion of nets from within 1 mile of the rivers in which it spawns, while at the same time the farmers about Missisquoi Bay are not wholly excluded from fishing. The Vermont State hatchery at Swanton is also a large factor in the preservation of the yellow pike. In Lake Champlain, as about Lake Memphremagog and about the Thousand Islands, the interests of the summer angler are of far greater financial importance to the resident people than market fisheries could be. Since these regulations have been made public no serious complaint has arisen from any part of Lake Champlain, which for a long time has been a special center of friction. It is believed that these regulations are just to all interests concerned.

Of the Great Lakes, Lake Erie is by far the most important so far as fishery interests are concerned. Its waters are shallow, and therefore stocked with fish food, which is not the case in the deeper waters of the upper lakes. Moreover, in Lake Erie the operations of the fish hatcheries have been most conspicuously successful. The number of whitefish, the most important species, placed in Lake Erie each year by the hatcheries of the United States, of Ohio, and of Pennsylvania, approaches a billion a year. The United States may properly be charged with grossly overfishing this lake. At the same time it must receive credit for the hatchery work done, which has restored the fisheries to their former extent.

In Appendix A are given statistics in regard to the output of hatcheries.

Thus far the hatcheries of Canada and the hatcheries on lakes other than Lake Erie have been quite inadequate. Provision has now been made in Canada for extension of the hatcheries, and for

some time the hatcheries of Ohio and of the United States at Put in Bay have received eggs from Canadian fishermen.

The present writer believes that hatchery measures are more important than measures of restriction. The whitefish, yellow pike, lake trout, and lake herring are the fishes of the Great Lakes which yield the best returns from artificial hatching.

Nos. 34 to 36, prescribing minimum weights for market fish, are matters of high importance and the limits here given are generally approved by competent fishermen. Every fisherman at times takes immature fish whether he will or not. In the case of the whitefish and other very sensitive species, it is not possible to return these to the water alive, and the fisherman is forbidden to throw them overboard. The regulations contemplate that he shall not sell these fish and that dealers shall not buy them. The fisherman has the option to use them himself or to give them away in charity.

There is a strong feeling among fishermen that "a legal net should make legal fish"; that is, that whatever is taken in a net set according to law should be allowed to go into the market. On the other hand, there is also a feeling that only the boats and markets need be inspected, and that the fishermen should use any form of net they like and any mesh, provided that the catch is not below legal size. In the long run, perhaps, this view of the case may be adopted, but the experience of wardens forces us to believe that, for the present, the mesh of the net and the size of the fish should both be guarded.

Regulation 44, forbidding nets in rivers, is generally approved, except by those fishermen who violate it.

In No. 46 it is provided that in those waters where pound nets are set mainly for whitefish, they should have a mesh of not less than $3\frac{1}{4}$ inches.

The rest of this regulation is based on the Ohio statute, modified slightly at the advice of the Ohio State Fish Commission. Whether the mesh indicated, $2\frac{3}{4}$ inches, is best, and whether half the back of the crib need be of this size, are matters to be studied. Fishermen claim that $2\frac{1}{2}$ inches mesh in one-third the back of the crib is adequate; and, in deference to their wishes that the size of the mesh be reduced one-fourth of an inch, I have deemed it best to suggest to my colleague that, pending further study on this point, the regulation be amended by reducing the size of mesh from $2\frac{3}{4}$ to $2\frac{1}{2}$ inches.

It is believed that the rule requiring "fishing measure" is the only one wardens can enforce. Pound-net mesh shrinks much on tarring, and to allow "factory measure," as desired by many fishermen, is to leave the regulations almost insusceptible of enforcement. It is claimed that factories will often bill a net as of any size desired.

Owing to an oversight on the part of the commissioners, an amendment to regulation 46 is necessary with reference to the herring fisheries (Georgian Bay herring) of Lake Huron. When this regulation was agreed upon the commissioners did not know that in certain parts of Lake Huron the lake herring of a very small species were taken only in pound nets, and they adopted for the mesh of pound nets a size fitted only for larger fish. My colleague has already agreed with me that this regulation should be changed so as to leave for the present the waters in question to the operation of the existing statutes of Canada and Michigan by inserting in it, after the first paragraph, the following clause:

This regulation shall not apply in the waters of Lake Huron south of a line running due west from the shore of Pleasant Bay, Province of Ontario, and terminating at Thunder Bay Lighthouse, on Thunder Bay Island, and about two and a half statute miles north of the forty-fifth parallel of north latitude.²

In No. 49 the lake herring about Hamilton Beach are of a smaller species, hence the commissioners have agreed to amend regulation No. 49 by inserting at the end of the second paragraph a provision that it "shall not apply in the waters of Lake Ontario adjacent to the shore of Halton and Peel Counties, Province of Ontario," where a small variety of herring occurs as is claimed in the waters of Lake Huron above referred to.

No. 48. The concealed movable trap net, known as "submarine net," was invented on Oneida Lake for poaching purposes. It was brought to Lake Erie to capture black bass and to Lake Huron to capture yellow pike and other species. Its use is very objectionable as it is subject to no regulation.

From it has arisen the large trap net or top and bottom net used in the western part of Lake Erie, but mostly forbidden elsewhere. This is much like a pound net, but its crib is covered. Hence in storms its catch is destroyed and drowned. The limp mesh enables it to hold smaller fish than the pound net. On the other hand, the much lower cost enables fishermen with little capital to maintain themselves. The top and bottom net costs perhaps \$100, the pound net \$300 or more. For gill-net fishing, at present, a steam tug is necessary.

It is a question for later determination whether any form of trap net or net with closed crib can safely be allowed. The commissioners are not at present prepared to define the terms on which any such net may be used; but, in view of the fact that these regulations will not, if enacted, go into effect for another year, during which time the commission will probably agree upon some terms of regulation, I have, upon further consideration, proposed to amend regulation 48 so as to allow the use of trap nets under proper regulation.

No. 47. The last clause of this regulation is intended to legalize the locations of pound nets as specifically allowed by the State of Michigan.

No. 49: The mesh here allowed for gill nets, $3\frac{1}{2}$ inches, for Lake Erie seemed to us the smallest which would adequately protect the fish of that lake, but in deference to the wishes of local fishing interests I have proposed an amendment reducing the size of the mesh to 3 inches. It is claimed by some that a smaller mesh than $2\frac{1}{2}$ inches is desired in the west end of Lake Superior for lake herring, and as above noted it will be provisionally allowed in the west end of Lake Ontario.

It may be noted that our regulations have not provided for the protection of the blue fin, cisco, longjaw, and other deep-water allies of the lake herring. This is pending investigation of their habits. Meanwhile the statute of Michigan, to which State these species are chiefly limited, has given these species adequate protection.

It is recognized that overfishing has been the rule throughout the Great Lake system, checked in Lake Erie only by the work of the hatcheries. The limitations in regulation 47 are intended somewhat to reduce the number of pound nets, and those in regulation 50 to limit the amount of gill netting.

Each form of net is destructive in proportion to the number of fish it takes, especially if immature fish be included. In general, the gill net is more wasteful than the pound net, because all fish taken die. If the net is left too long in the water, the fish spoil. This often happens in summer.

In the spawning season the eggs and milt of the fish taken in pound nets can always be saved for hatchery purposes. In most of the gill-net catches the eggs and the milt are lost. In wintertime gill nets are often torn from their moorings by storms and drift about entangling fishes until they sink. In one storm in Lake Erie in 1909 upward of 150 miles of gill nets were thus afloat, doing great mischief to the fisheries.

For the reason of the warmth of the water in Lake Erie and Lake Ontario it has been thought best (in regulation 50) to restrict the amount of netting used by a single boat. Some operators at Erie and Cleveland now much exceed the amount considered reasonable. These limits should be subject to further investigation, pending which I have, at the instance of the fishermen of Lake Erie, laid before the commission an amendment which will permit the use in the waters of that lake of 60,000 yards of netting during the months of March and April.

The commission has not recommended any close season for the Great Lakes for the reason that local conditions vary so much that sweeping rules are impossible. Canada has close seasons varying with different counties. Most of the States bordering on the lakes have also close seasons. In general pound nets can not be used in December, January, February, or March, owing to storms, nor in July and August in the lower lakes, owing to vegetation in warm water rotting the twine. Gill nets should not be used in midwinter because of the danger of losing them as derelicts, nor in the lower lakes in midsummer because the fish soon decay.

In regions where hatcheries exist, October and November, the spawning season for whitefish, lake herring, and trout, are desirable months for fishing, each vessel being required to save the eggs and milt. Where there are no hatcheries, it is best to prohibit fishing after October 15.

In view of all this, it will be readily seen that these regulations as a whole are not arbitrary nor severe, but rather that they represent a minimum of the preservation necessary for the conservation of these most valuable fisheries, the joint property of Canada and the United States.

Regulation 51 mentions the fyke net as available for coarse fish. In western part of Lake Erie a peculiar net known locally as fyke net is used in the river mouths for coarse fish. This so-called fyke net, unlike the fyke net mentioned in the regulations, is a sort of pound net, in which the crib is held in a frame of iron rectangles. This net would be included in the definition of a trap net given in the regulations. As, however, it can not be used in the open lake, as storms would tear it loose, but only in the mouths of rivers, it does not appear that these regulations apply to it.

In the same region a peculiar net called trammel net is also used, a net apparently objectionable, as young fish become entangled in it. This is not mentioned in the regulations, as its use is unimportant.

Regulation 52: No nets of any kind, those for carp excepted, are now used in Lake St. Clair, and it is desirable to hold the St. Clair Flats for black bass anglers.

Regulation 45, establishing a neutral zone along the middle of Lake Erie, is intended to prevent the encroachment of fishing vessels into the waters of the other nation. Such encroachment subjects vessels to seizure.

The communications given in Appendix B are typical of the attitude of those favoring the conservation of the fisheries. (See Appendix B.)

In Lake of the Woods (53 to 65) it will be desirable to make still further limitations, increasing the size limit of yellow pike, reducing the number of pound nets, and closing the Grand Traverse, or main open part of the lake, to gill-net fishing.

The Straits of Fuca and adjacent waters offer the most difficult problems, while at the same time the values of the fisheries involved render conservation and restriction a delicate task.

The chief species involved is the red salmon or sockeye salmon. This fish spawns in the shallows at the heads of mountain lakes. It mostly spends its first year in the lakes, then passes down to the open sea, where its movements are almost unknown. At the age of 4 years it runs. In early August it enters the Straits of Fuca, thence it passes up to the mouth of the Fraser River, the majority through Rosario Straits, perhaps a fourth through Haro Straits. It uses a week or two for the passage from Cape Flattery to the Fraser River and a month or more to rise to the spawning grounds. When they enter the straits, these salmon are in prime condition. They do not feed while running, and before they spawn their flesh and their appearance have undergone great changes, and after the 1st of September they are not fit for food. After spawning, in November, all die, male and female, without exception.

The number running each year is conditioned on the number which reached the spawning beds four years before. They run, therefore, in independent cycles. In 1901, 1905 and 1909 the number running was enormous. There will without doubt be a great run in 1913. The run of 1910 was less than one half that of 1909, but as apparently more spawned in 1906 than in 1908, the run of 1910 will be larger than that of 1912, that of 1907 (1911) being apparently intermediate.

All of these fishes (excepting a small run which passes up the Skagit River) are spawned in Canadian waters, at the head of the multitude of lakes drained by the Fraser River. Most of them pass to the sea through United States waters (Rosario Straits, etc.) and again they return through the same waters to the spawning beds of the lakes. All hatchery operations must be conducted on Canadian soil, and no eggs can be secured for hatching except from Canada.

On the other hand, more than half the fish caught for canning purposes are taken in waters under United States jurisdiction.

On every available spot in and about Rosario Straits and along the mainland to Point Roberts, pound nets are established. In the same way the Canadian waters, the lower Fraser River, and the waters off its mouth are filled with a thicket of gill nets.

Besides these the open waters of the Straits of Fuca are now beset with great purse seines, which exceed in effectiveness, especially in seasons of the great runs, both gill nets and pound nets. (It is probable that some regulation of the use of these nets should be adopted.)

The publication of the regulations in 1909 has given the fishermen interested opportunity to consider the practical effect of their operation. As the result of suggestions which have come from the Washington fishermen, I have laid before the commission, and they are now under consideration by it, the following amendments to regulations 62, 63, and 64:

No. 62: To be amended by adding a provision that it shall not apply to humpback salmon.

No. 63: To be amended by making the weekly close season conform to the laws of the State of Washington, which provide for a close season from 4 p. m. Friday to 4 a. m. Sunday. It is feared that if the regulation be adopted in its present form it will have the effect of extending the close season from 4 p. m. Friday, provided by the Washington statute, to 6 a. m. Monday, provided by the regulation, making in all 62 hours.

No. 64: This regulation is highly important in its relation to regulation 63, although thus far most difficult to enforce, and the prohibition of the jigger was intended to supplement its other provisions. The "jigger" is a device to keep the fish from passing around the net in the close season. The fishermen claim, however, that the provisions of this regulation requiring nets to be so constructed as not to take fish during the weekly close season covers every reasonable requirement, and I have, therefore, proposed that, pending further inquiry, the regulation be so amended as to permit the use of jiggers, or at least of jiggers in which an opening is maintained.

In the last clause of regulation 65, before "4 inches," the words "not less than" were omitted by a clerical error. It is, however, evident from the text that 4 inches is meant simply as a minimum, not as an exact definition of the size of the mesh.

It is believed that the restrictions in regulations 62, 63, 64, 65, and 66 bear fairly evenly on all classes of fishermen, that they will tend to reduce the salmon catch to the extent of filling the spawning beds, and thus provide that every year, not one year in four as now, shall yield a normal harvest of salmon.

In Appendix C is a record of the catch of Fraser River salmon for 10 years.

In Appendix D is given a record of the personnel now engaged on the part of the United States in the enforcement of the fishery statutes in international waters.

DAVID STARR JORDAN,
International Commissioner of Fisheries for the United States.

HON. PHILANDER C. KNOX,
Secretary of State.

APPENDIX A.

I. STATEMENT OF COMMERCIAL FISHES PLANTED IN THE GREAT LAKES BY STATE COMMISSIONS.

PENNSYLVANIA.

Fry of yellow pike, blue pike, whitefish, and lake herring have been planted in Lake Erie by the State of Pennsylvania as follows:

| Yellow pike: | | Whitefish: | |
|--------------|-------------|---------------|------------|
| 1899..... | 24,040,000 | 1900..... | 32,000,000 |
| 1900..... | 23,210,000 | 1901..... | 19,240,000 |
| 1901..... | 25,750,000 | 1902..... | 44,560,000 |
| 1902..... | 43,720,000 | 1903..... | 19,826,000 |
| 1903..... | 23,340,000 | 1904..... | 39,200,000 |
| 1904..... | 27,740,000 | 1905..... | 34,489,000 |
| 1905..... | 51,200,000 | 1906..... | 36,458,000 |
| 1906..... | 53,700,000 | 1907..... | 39,446,500 |
| 1907..... | 107,773,250 | 1908..... | 54,114,000 |
| 1908..... | 104,062,500 | Lake herring: | |
| Blue pike: | | 1901..... | 38,600,000 |
| 1899..... | 1,800,000 | 1902..... | 10,800,000 |
| 1900..... | 7,800,000 | 1903..... | 1,840,000 |
| 1901..... | 12,800,000 | 1904..... | 5,600,000 |
| 1902..... | 5,000,000 | 1905..... | 22,840,000 |
| 1903..... | 20,500,000 | 1906..... | 39,120,000 |
| 1904..... | 2,000,000 | 1907..... | 7,000,000 |
| 1905..... | 9,450,000 | 1908..... | 18,892,000 |
| 1908..... | 105,000,000 | | |

OHIO.

The following plants of whitefish, lake herring, wall-eyed pike, and pickerel fry were made in Lake Erie by the State of Ohio in 1901 to 1907:

| | | | |
|-----------|------------|-----------|-------------|
| 1901..... | 50,000,000 | 1905..... | 35,000,000 |
| 1902..... | 40,000,000 | 1906..... | 25,000,000 |
| 1904..... | 30,000,000 | 1907..... | 100,000,000 |

Present capacity of Put-in Bay hatchery, 428,544,000 herring fry.

MICHIGAN.

Whitefish, lake trout, and wall-eyed pike planted in Lakes Michigan and Superior in 1901 to 1908:

| | Whitefish. | Lake trout. | Wall-eyed pike. |
|-----------|------------|-------------|-----------------|
| 1901..... | 35,450,000 | 19,980,000 | 78,200,000 |
| 1902..... | 66,820,000 | 17,877,000 | 37,325,000 |
| 1903..... | 37,500,000 | 16,168,000 | 46,170,000 |
| 1904..... | 20,375,000 | 20,462,000 | 37,825,000 |
| 1905..... | 15,278,000 | 18,803,000 | 76,800,000 |
| 1906..... | 53,780,000 | 16,107,000 | 79,140,000 |
| 1907..... | 27,025,000 | 19,724,000 | 44,900,000 |
| 1908..... | 12,210,000 | 12,345,000 | 112,075,000 |

II. STATEMENT OF FISH CULTURE OPERATIONS CONDUCTED BY THE UNITED STATES BUREAU OF FISHERIES FOR THE BENEFIT OF THE GREAT LAKES. FURNISHED BY THE UNITED STATES BUREAU OF FISHERIES JANUARY 2, 1911.

Output of fish and eggs and cost of operating.

CAPE VINCENT (N. Y.) STATION.

| Fiscal year. | Species. | Eggs. | Fry. | Fingerlings, yearlings, and adults. | Cost of operating. |
|--------------|-------------------------|-------------|--------------|-------------------------------------|--------------------|
| 1901..... | Brook trout..... | | 274, 200 | | \$11, 179. 67 |
| | Lake trout..... | ..... | 1, 485, 000 | ..... |  |
| | Whitefish..... | ..... | 13, 552, 000 | ..... |  |
| | Pike perch..... | 4, 000, 000 | 37, 550, 000 | ..... |  |
| | Sturgeon..... | ..... | 20, 000 | ..... |  |
| 1902..... | Brook trout..... | | 749, 350 | | 9, 788. 64 |
| | Rainbow trout..... | ..... | 38, 360 | ..... |  |
| | Steelhead trout..... | ..... | 3, 088, 880 | 1, 319 | |
| | Lake trout..... | ..... | 34, 300, 000 | ..... |  |
| | Pike perch..... | ..... | 30, 575, 000 | ..... |  |
| 1903..... | Brook trout..... | | 377, 000 | | 7, 864. 51 |
| | Lake trout..... | ..... | 6, 443, 170 | ..... |  |
| | Land-locked salmon..... | ..... | 4, 400 | ..... |  |
| | Whitefish..... | ..... | 25, 500, 000 | ..... |  |
| | Pike perch..... | ..... | 4, 650, 000 | ..... |  |
| 1904..... | Brook trout..... | | 1, 198, 600 | | 8, 274. 31 |
| | Rainbow trout..... | ..... | 42, 000 | ..... |  |
| | Lake trout..... | ..... | 4, 470, 000 | ..... |  |
| | Land-locked salmon..... | ..... | 9, 200 | ..... |  |
| | Whitefish..... | ..... | 14, 800, 000 | ..... |  |
| 1905..... | Pike perch..... | | 100, 000 | | 9, 533. 54 |
| | Brook trout..... | ..... | 775, 540 | ..... |  |
| | Steelhead trout..... | ..... | 24, 700 | ..... |  |
| | Lake trout..... | ..... | 4, 876, 000 | ..... |  |
| | Land-locked salmon..... | ..... | 4, 800 | ..... |  |
| 1906..... | Whitefish..... | | 21, 000, 000 | | 8, 013. 48 |
| | Pike perch..... | ..... | 6, 500, 000 | ..... |  |
| | Brook trout..... | ..... | 545, 000 | ..... |  |
| | Lake trout..... | ..... | 4, 875, 000 | ..... |  |
| | Whitefish..... | ..... | 23, 700, 000 | ..... |  |
| 1907..... | Pike perch..... | | 8, 000, 000 | | 7, 696. 47 |
| | Brook trout..... | ..... | 971, 990 | ..... |  |
| | Lake trout..... | ..... | 4, 234, 500 | ..... |  |
| | Whitefish..... | ..... | 29, 000, 000 | ..... |  |
| | Pike perch..... | ..... | 15, 700, 000 | ..... |  |
| 1908..... | Whitefish..... | | 44, 200, 000 | | 9, 144. 50 |
| | Pike perch..... | ..... | 9, 900, 000 | ..... |  |
| | Yellow perch..... | ..... | 600, 000 | ..... |  |
| | Lake trout..... | ..... | 4, 352, 120 | ..... |  |
| | Brook trout..... | ..... | 766, 000 | 141, 000 | |
| 1909..... | Steelhead trout..... | | 19, 550 | | 9, 366. 01 |
| | Land-locked salmon..... | ..... | 28, 500 | ..... |  |
| | Whitefish..... | ..... | 19, 870, 000 | ..... |  |
| | Pike perch..... | ..... | 15, 700, 000 | ..... |  |
| | Yellow perch..... | ..... | 500, 000 | ..... |  |
| 1910..... | Rainbow trout..... | | 4, 500 | | 8, 344. 05 |
| | Brook trout..... | ..... | 899, 000 | ..... |  |
| | Lake trout..... | ..... | 3, 190, 000 | ..... |  |
| | Steelhead trout..... | ..... | 46, 761 | ..... |  |
| | Whitefish..... | ..... | 20, 170, 000 | ..... |  |
| | Brook trout..... | | 941, 500 | | 12, 633. 07 |
| | Lake trout..... | ..... | 4, 852, 000 | ..... |  |
| | Pike perch..... | ..... | 4, 800, 000 | ..... |  |
| | Land-locked salmon..... | ..... | 14, 500 | ..... |  |
| | Rainbow trout..... | ..... | 38, 000 | ..... |  |
| | Yellow perch..... | ..... | 1, 600, 000 | ..... |  |

PUT IN BAY (OHIO) STATION.

| | | | | | |
|-------------------------|-------------------|--------------|---------------|-------|---------------|
| 1901..... | Whitefish..... | 10, 554, 000 | 125, 100, 000 | | \$13, 363. 99 |
| | Lake herring..... | 30, 820, 000 | 20, 200, 000 | ..... |  |
| | Pike perch..... | 42, 100, 000 | 156, 587, 000 | ..... |  |
| 1902..... | Whitefish..... | 56, 260, 000 | 200, 500, 000 | | 15, 529. 83 |
| | Pike perch..... | 60, 000, 000 | 143, 000, 000 | ..... |  |
| | Whitefish..... | 38, 052, 000 | 71, 125, 000 | ..... |  |
| 1903 ¹ | Lake herring..... | | 1, 500, 000 | | 12, 633. 07 |
| | Pike perch..... | 70, 000, 000 | 105, 325, 000 | ..... |  |
| | Lake trout..... | ..... | 491, 600 | ..... |  |

¹ Transferred to other stations of the bureau, 30,000,000 pike perch eggs.

II. STATEMENT OF FISH CULTURE OPERATIONS CONDUCTED BY THE UNITED STATES BUREAU OF FISHERIES FOR THE BENEFIT OF THE GREAT LAKES. FURNISHED BY THE UNITED STATES BUREAU OF FISHERIES JANUARY 2, 1911—Continued.

Output of fish and eggs and cost of operating—Continued.

PUT IN BAY (OHIO) STATION—Continued.

| Fiscal year. | Species. | Eggs. | Fry. | Fingerlings, yearlings, and adults. | Cost of operating. |
|-------------------------|-------------------|-------------|-------------|-------------------------------------|--------------------|
| 1904 ¹ | Whitefish..... | 46,280,000 | 53,250,000 | | \$10,798. 15 |
| | Lake herring..... | | 23,300,000 | | |
| | Pike perch..... | 82,000,000 | 139,275,000 | | |
| 1905 ² | Lake trout..... | | 884,000 | | 11,903. 00 |
| | Whitefish..... | 59,953,000 | 120,300,000 | | |
| | Lake herring..... | 87,040,000 | 35,000,000 | | |
| | Pike perch..... | 88,350,000 | 153,700,000 | | |
| 1906 ³ | Lake trout..... | | 913,000 | | 9,942. 79 |
| | Whitefish..... | 49,529,000 | 140,000,000 | | |
| | Lake herring..... | 38,300,000 | | | |
| | Pike perch..... | 99,600,000 | 135,400,000 | | |
| 1907 ⁴ | Lake trout..... | | 600,000 | | 11,675. 41 |
| | Whitefish..... | 57,249,000 | 87,500,000 | | |
| | Lake herring..... | 9,040,000 | 50,000,000 | | |
| | Pike perch..... | 204,150,000 | 229,000,000 | | |
| 1908 ⁵ | Lake trout..... | | 900,000 | | 13,526. 35 |
| | Whitefish..... | 107,766,000 | 190,000,000 | | |
| | Lake cisco..... | 12,790,000 | 3,200,000 | | |
| | Lake trout..... | | 897,500 | | |
| 1909 ⁶ | Pike perch..... | 169,725,000 | 80,000,000 | | 14,318. 46 |
| | Whitefish..... | 141,120,000 | 139,000,000 | | |
| | Pike perch..... | 407,850,000 | 79,750,000 | | |
| | Lake trout..... | | 343,000 | | |
| 1910 ⁷ | Yellow perch..... | | 10,000,000 | | 11,395. 31 |
| | Pike perch..... | 324,475,000 | 89,375,000 | | |
| | Whitefish..... | 77,068,000 | 75,020,000 | | |
| | Lake herring..... | 1,440,000 | 70,300,000 | | |

NORTHVILLE (MICH.) STATION.

[Including substations.]

| | | | | | |
|--------------------------|-----------------------------|------------|-------------|---------|--------------|
| 1901 ⁸ | Brook trout..... | | 991,250 | | \$16,767. 76 |
| | Whitefish..... | 36,145,000 | 125,050,000 | | |
| | Lake trout..... | 4,500,000 | 5,610,000 | 153,000 | |
| | Loch Leven trout..... | 10,000 | 50,000 | | |
| 1902 ⁹ | Rainbow trout..... | | 72,000 | | 20,083. 53 |
| | Whitefish..... | 55,000,000 | 217,500,000 | | |
| | Lake trout..... | 3,535,000 | 11,255,000 | | |
| | Brook trout..... | | 1,031,000 | | |
| | Loch Leven trout..... | | 75,000 | | |
| | Rainbow trout..... | | 86,000 | | |
| | Steelhead trout..... | | 140,000 | | |
| 1903 ¹⁰ | Grayling..... | | 200,000 | | 20,521. 53 |
| | Whitefish..... | 25,275,000 | 132,250,000 | | |
| | Lake trout..... | 5,850,000 | 14,985,000 | | |
| | Brook trout..... | | 971,000 | | |
| | Loch Leven trout..... | | 80,000 | | |
| | Steelhead trout..... | | 25,000 | | |
| | Land-locked salmon..... | | 3,000 | | |
| 1904 ¹¹ | Pike perch..... | | 2,000,000 | | 19,768. 87 |
| | Whitefish..... | 14,035,000 | 98,000,000 | | |
| | Lake trout..... | 3,010,000 | 5,750,000 | | |
| | Brook trout..... | | 830,000 | 15,000 | |
| | Loch Leven trout..... | | 138,000 | 42 | |
| | Rainbow trout..... | | 60,000 | 28,000 | |
| | Steelhead trout..... | | 9,500 | 49,040 | |
| | Small-mouth black bass..... | | | 15,000 | |
| | Pike perch..... | 22,495,000 | 2,300,000 | | |

¹ Transferred to other stations of the bureau, 23,000,000 pike perch eggs.

² Transferred to other stations of the bureau, 30,920,000 whitefish eggs and 10,000,000 pike perch eggs.

³ Transferred to other stations of the bureau, 25,407,000 whitefish eggs and 7,000,000 pike perch eggs.

⁴ Transferred to other stations of the bureau, 65,250,000 pike perch eggs.

⁵ Transferred to other stations of the bureau, 20,000,000 whitefish eggs and 52,000,000 pike-perch eggs.

⁶ Transferred to other stations of the bureau, 50,576,000 whitefish eggs and 37,600,000 pike-perch eggs.

⁷ Transferred to other stations of the bureau, 37,300,000 pike-perch eggs and 25,640,000 whitefish eggs.

⁸ 16,300,000 whitefish eggs and 3,767,000 lake trout eggs transferred to other stations of the bureau.

⁹ 3,072,000 lake trout eggs and 49,400,000 whitefish eggs transferred to other stations of the bureau.

¹⁰ 1,500,000 lake trout eggs and 68,000,000 whitefish eggs transferred to other stations of the bureau.

¹¹ 1,005,000 lake trout eggs and 25,980,000 whitefish eggs transferred to other stations of the bureau.

II. STATEMENT OF FISH CULTURE OPERATIONS CONDUCTED BY THE UNITED STATES BUREAU OF FISHERIES FOR THE BENEFIT OF THE GREAT LAKES. FURNISHED BY THE UNITED STATES BUREAU OF FISHERIES JANUARY 2, 1911—Continued.

Output of fish and eggs and cost of operating—Continued.

NORTHVILLE (MICH.) STATION—Continued.

| Fiscal year. | Species. | Eggs. | Fry. | Fingerlings, yearlings, and adults. | Cost of operating. |
|------------------------|-------------------------------|------------|-------------|-------------------------------------|--------------------|
| 1905 ¹ | Whitefish..... | 1,010,000 | 101,000,000 | | \$21,196.38 |
| | Lake trout..... | 4,546,000 | 21,834,000 | 650 | |
| | Brook trout..... | ..... | 795,000 | 131,560 | |
| | Loch Leven trout..... | ..... | ..... | 12 | |
| | Rainbow trout..... | ..... | 48,000 | 1,315 | |
| | Steelhead trout..... | ..... | 16,000 | 32 | |
| | Small-mouth black bass..... | ..... | ..... | 102,150 | |
| | Pike perch..... | 57,400,000 | 21,000,000 | ..... |  |
| 1906 ² | Whitefish..... | 23,570,000 | 79,000,000 | | 20,451.41 |
| | Lake trout..... | 25,010,000 | 15,500,000 | ..... |  |
| | Brook trout..... | ..... | 492,991 | 21,000 | |
| | Loch Leven trout..... | ..... | 22,525 | ..... |  |
| | Rainbow trout..... | ..... | 29,000 | ..... |  |
| | Steelhead trout..... | ..... | 42,000 | ..... |  |
| | Small-mouth black bass..... | ..... | 6,000 | 36,900 | |
| | Pike perch..... | 34,500,000 | 25,600,000 | ..... |  |
| 1907 ³ | Whitefish..... | 32,650,000 | 90,900,000 | | 21,413.62 |
| | Lake trout..... | 23,520,000 | 15,656,000 | ..... |  |
| | Brook trout..... | ..... | 568,000 | 2,500 | |
| | Rainbow trout..... | ..... | ..... | 13,000 | |
| | Small-mouth black bass..... | ..... | ..... | 22,931 | |
| | Pike perch..... | 50,000,000 | 23,500,000 | ..... |  |
| 1908 ⁴ | Whitefish..... | 31,500,000 | 130,000,000 | | 21,077.41 |
| | Lake trout..... | 2,289,000 | 14,241,600 | ..... |  |
| | Steelhead trout..... | ..... | 21,000 | ..... |  |
| | Brook trout..... | 50,000 | 505,000 | 147,000 | |
| | Loch Leven trout..... | ..... | ..... | 12 | |
| | Small-mouth black bass..... | ..... | 2,000 | 44,825 | |
| | Pike perch..... | 48,000,000 | 39,300,000 | ..... |  |
| 1909 ⁵ | Lake trout..... | 22,756,000 | 15,197,500 | 30,000 | 22,638.16 |
| | Whitefish..... | 1,100,000 | 98,000,000 | ..... |  |
| | Pike perch..... | 50,000,000 | 45,350,000 | ..... |  |
| | Brook trout..... | ..... | 366,000 | 113,313 | |
| | Steelhead trout..... | ..... | 21,000 | ..... |  |
| | Small-mouthed black bass..... | ..... | ..... | 39,790 | |
| 1910 ⁶ | Whitefish..... | 4,000,000 | 75,000,000 | | 20,657.81 |
| | Pike perch..... | 34,280,000 | 12,100,000 | ..... |  |
| | Lake trout..... | 10,010,000 | 19,584,000 | 3,500 | |
| | Brook trout..... | ..... | 426,000 | 106,200 | |
| | Rainbow trout..... | ..... | 500 | 82,000 | |
| | Small-mouthed black bass..... | ..... | 162,000 | 14,000 | |

DULUTH (MINN.) STATION.

| | | | | | |
|------------------------|----------------------|-----------|------------|--------|------------|
| 1901 ⁷ | Brook trout..... | | 46,855 | | \$7,896.62 |
| | Rainbow trout..... | ..... | 39,900 | ..... |  |
| | Lake trout..... | 1,400,000 | 5,595,000 | ..... |  |
| | Whitefish..... | ..... | 14,600,000 | ..... |  |
| 1902 ⁸ | Brook trout..... | | 92,230 | | 8,355.75 |
| | Rainbow trout..... | ..... | 32,000 | ..... |  |
| | Steelhead trout..... | ..... | 96,900 | 30,000 | |
| | Lake trout..... | 1,700,000 | 7,150,000 | ..... |  |
| | Grayling..... | ..... | 199,000 | ..... |  |
| | Whitefish..... | ..... | 29,800,000 | ..... |  |
| 1903 ⁹ | Brook trout..... | | 98,000 | | 8,063.34 |
| | Rainbow trout..... | ..... | 2,000 | ..... |  |
| | Steelhead trout..... | ..... | 49,313 | ..... |  |
| | Lake trout..... | 2,435,896 | 6,880,000 | ..... |  |
| | Whitefish..... | ..... | 17,000,000 | ..... |  |
| | Pike perch..... | ..... | 3,900,000 | ..... |  |

¹ 7,430,000 lake trout eggs and 25,500,000 whitefish eggs and 5,000,000 pike perch eggs transferred to other stations of the bureau.

² 8,124,000 lake trout eggs and 25,500,000 whitefish eggs transferred to other stations of the bureau.

³ 9,898,000 lake trout eggs and 14,500,000 pike perch eggs and 51,500,000 whitefish eggs transferred to other stations of the bureau.

⁴ 47,500,000 whitefish eggs, 16,000,000 pike perch eggs, and 2,650,000 lake trout eggs transferred to other stations of the bureau.

⁵ 14,110,000 lake-trout eggs, 60,000,000 whitefish eggs, and 32,800,000 pike-perch eggs transferred to other stations of the bureau.

⁶ 5,300,000 lake-trout eggs and 20,500,000 whitefish eggs transferred to other stations of the bureau.

⁷ 700,000 lake trout eggs transferred to other stations of the bureau.

⁸ 6,121,000 lake trout eggs transferred to other stations of the bureau.

⁹ 9,886,320 lake trout eggs transferred to other stations of the bureau.

II. STATEMENT OF FISH CULTURE OPERATIONS CONDUCTED BY THE UNITED STATES BUREAU OF FISHERIES FOR THE BENEFIT OF THE GREAT LAKES. FURNISHED BY THE UNITED STATES BUREAU OF FISHERIES JANUARY 2, 1911—Continued.

Output of fish and eggs and cost of operating—Continued.

DULUTH (MINN.) STATION—Continued.

| Fiscal year. | Species. | Eggs. | Fry. | Fingerlings, yearlings, and adults. | Cost of operating. |
|-------------------------|--------------------------|-----------|------------|-------------------------------------|--------------------|
| 1904 ¹ | Brook trout | | 17,000 | | \$9,086.81 |
| | Rainbow trout | | 13,400 | | |
| | Steelhead trout | | | 48,000 | |
| | Lake trout | 50,000 | 7,155,000 | 10,000 | |
| | Whitefish | | 10,000,000 | | |
| | Pike perch | | 3,850,000 | | 8,068.64 |
| 1905 | Land-locked salmon | | 4,903 | | |
| | Brook trout | | 117,000 | | |
| | Steelhead trout | | 45,000 | | |
| | Lake trout | 774,000 | 8,139,000 | | |
| | Whitefish | 380,000 | 25,860,000 | | 8,530.82-- |
| | Pike perch | | 4,100,000 | | |
| 1906 | Brook trout | | 142,000 | | |
| | Steelhead trout | | 81,200 | 53,000 | |
| | Lake trout | 80,000 | 7,913,000 | | |
| | Whitefish | | 21,055,000 | | 9,165.66 |
| | Pike perch | | 3,025,000 | | |
| 1907 | Brook trout | | 60,000 | 122,000 | |
| | Steelhead trout | | 8,000 | 9,300 | |
| | Lake trout | | 6,060,000 | 3,388,000 | |
| | Whitefish | | 17,400,000 | | 9,373.06 |
| | Pike perch | | 800,000 | | |
| 1908 ² | Brook trout | | 100,000 | 878,600 | |
| | Steelhead trout | | | 49,000 | |
| | Lake trout | 445,000 | 5,380,000 | 3,150,000 | |
| | Whitefish | | 19,900,000 | | 10,197.37 |
| | Pike perch | | 9,070,000 | | |
| 1909 | Brook trout | | | 262,800 | |
| | Steelhead trout | | | 45,500 | |
| | Lake trout | 50,000 | 7,760,000 | 1,852,000 | |
| | Whitefish | | 19,800,000 | | 9,293.22 |
| | Pike perch | | 16,500,000 | | |
| 1910 ³ | Brook trout | | | 370,000 | |
| | Land-locked salmon | | | 11,400 | |
| | Lake trout | 5,425,000 | 8,825,000 | 4,246,500 | |
| | Pike perch | | 13,800,000 | | |

Output and cost of operating for the period of 10 fiscal years ending June 30, 1910.

CAPE VINCENT (N. Y.) STATION.

| Fiscal year. | Output benefiting primarily international waters. | Transfers of eggs to other stations of the bureau. | Cost. |
|--------------|---|--|-------------|
| 1901 | 56,881,200 | | \$11,179.67 |
| 1902 | 68,572,909 | | 9,788.64 |
| 1903 | 36,974,570 | | 7,864.51 |
| 1904 | 20,619,800 | | 8,274.31 |
| 1905 | 33,181,040 | | 9,533.54 |
| 1906 | 37,120,000 | | 8,013.48 |
| 1907 | 49,906,490 | | 7,696.47 |
| 1908 | 60,007,170 | | 9,144.50 |
| 1909 | 40,163,500 | | 9,366.01 |
| 1910 | 32,462,761 | | 8,344.05 |
| Total | 435,889,440 | | 89,205.18 |

¹2,793,250 lake trout eggs transferred to other stations of the bureau.

²2,306,880 lake trout eggs transferred to other stations of the bureau.

³5,100,000 lake trout eggs transferred to other stations of the bureau.

Output and cost of operating for the period of 10 fiscal years ending June 30, 1910—Cont'd.

PUT IN BAY (OHIO) STATION.

| Fiscal year. | Output benefiting primarily international waters. | Transfers of eggs to other stations of the bureau. | Cost. |
|--------------|---|--|-------------|
| 1901..... | 385,361,000 | ----- | \$13,363.99 |
| 1902..... | 459,760,000 | ----- | 15,529.83 |
| 1903..... | 286,493,600 | 30,000,000 | 12,633.07 |
| 1904..... | 344,989,000 | 23,000,000 | 10,798.15 |
| 1905..... | 545,256,000 | 40,920,000 | 11,903.00 |
| 1906..... | 463,429,000 | 32,407,000 | 9,942.79 |
| 1907..... | 637,839,000 | 65,250,000 | 11,675.41 |
| 1908..... | 364,378,500 | 72,000,000 | 13,526.35 |
| 1909..... | 778,063,000 | 88,176,000 | 14,318.46 |
| 1910..... | 637,678,000 | 62,940,000 | 11,395.31 |
| Total..... | 5,103,247,100 | 414,693,000 | 125,086.36 |

NORTHVILLE (MICH.) AND AUXILIARY STATIONS.

| | | | |
|------------|---------------|-------------|-------------|
| 1901..... | 172,581,250 | 20,067,000 | \$16,767.76 |
| 1902..... | 288,822,000 | 52,472,000 | 20,083.53 |
| 1903..... | 181,439,000 | 69,500,000 | 20,521.53 |
| 1904..... | 146,734,582 | 26,985,000 | 19,768.87 |
| 1905..... | 207,766,699 | 37,930,000 | 21,196.38 |
| 1906..... | 203,830,416 | 33,624,000 | 20,451.41 |
| 1907..... | 236,832,431 | 65,898,000 | 21,413.62 |
| 1908..... | 266,100,437 | 66,150,000 | 21,077.41 |
| 1909..... | 232,973,603 | 106,910,000 | 22,636.16 |
| 1910..... | 155,769,200 | 25,800,000 | 20,657.81 |
| Total..... | 2,092,849,618 | 505,336,000 | 204,576.48 |

DULUTH (MINN.) STATION.

| | | | |
|------------|-------------|------------|------------|
| 1901..... | 21,681,755 | 700,000 | \$7,896.62 |
| 1902..... | 39,100,130 | 6,121,000 | 8,355.75 |
| 1903..... | 30,364,209 | 9,386,320 | 8,063.34 |
| 1904..... | 21,143,400 | 2,793,250 | 9,086.81 |
| 1905..... | 39,419,903 | ----- | 8,068.64 |
| 1906..... | 32,349,200 | ----- | 8,530.42 |
| 1907..... | 27,847,300 | ----- | 9,165.66 |
| 1908..... | 38,366,600 | 2,306,880 | 9,373.06 |
| 1909..... | 45,670,300 | ----- | 10,197.37 |
| 1910..... | 32,677,900 | 5,100,000 | 9,893.22 |
| Total..... | 328,620,697 | 26,407,450 | 88,030.89 |

GRAND SUMMARY.

Annual output and cost of operating the bureau's four stations and auxiliaries from which the output is principally deposited in international waters for a period of 10 fiscal years ending June 30, 1910.

| Fiscal year. | Output benefiting primarily international waters. | Transfers of eggs to other stations of the bureau. | Cost. |
|--------------|---|--|-------------|
| 1901..... | 636,505,205 | 20,767,000 | \$49,208.04 |
| 1902..... | 856,255,039 | 58,593,000 | 53,737.75 |
| 1903..... | 535,271,379 | 108,886,320 | 49,082.45 |
| 1904..... | 533,486,782 | 52,778,250 | 47,928.14 |
| 1905..... | 825,023,642 | 78,850,000 | 50,701.56 |
| 1906..... | 736,728,616 | 66,031,000 | 46,938.10 |
| 1907..... | 952,425,221 | 131,148,000 | 49,951.16 |
| 1908..... | 928,852,707 | 140,456,880 | 53,121.32 |
| 1909..... | 1,096,870,403 | 195,086,000 | 56,520.00 |
| 1910..... | 858,587,861 | 93,840,000 | 49,690.39 |
| Total..... | 7,960,606,855 | 946,436,450 | 506,898.91 |

APPENDIX B.

RESOLUTIONS PASSED BY AMERICAN FISHERIES SOCIETY AND AMERICAN FISH AND GAME PROTECTIVE ASSOCIATION, AND VIEWS OF VARIOUS FISHING FIRMS REGARDING FEDERAL CONTROL OF INTERNATIONAL WATERS.

(1) *American Fisheries Society (1906).*—The American Fisheries Society, at its annual meeting held at Grand Rapids, Mich., in 1906, adopted by unanimous vote the following resolutions:

"Whereas the members of the American Fisheries Society now assembled at Grand Rapids, Mich., view with alarm the threatened depletion of whitefish, lake trout, and other fishes in the waters and boundary rivers of the Great Lakes; and

"Whereas Ontario, to the north of us, advocates 'stopping fishing for five years,' and we do not believe such action will produce the desired results, but, on the contrary, we believe that lack of uniform laws between Canada and the several States bordering on the Great Lakes, and the lack of concurrent jurisdiction for boundary streams, without enforcement of existing laws, poor protection given during spawning season, and a total disregard of the size of fish caught by fishermen, are at the root of the evil: Therefore

"Resolved, That it is the sense of this meeting that Canada and the United States ought to enter into a treaty looking to the control of the fish in our Great Lakes, not only the stocking but the protection.

"Resolved further, That there should be Federal control of boundary streams, and that the States concerned should cede their rights to the National Government.

"Resolved further, That we heartily commend the efforts that have been made by Hon. George Shiras, of the third congressional district of Pennsylvania, looking to Federal control, and that we heartily pledge him our undivided support.

"Resolved further, That a copy of this resolution be furnished to each of our Senators and Representatives at Washington, also to each member of the Dominion's House of Parliament."

(2) *American Fisheries Society (1907).*—The next year (1907), at the annual meeting held at Erie, Pa., the following resolutions were unanimously adopted:

"Resolved, That this society reaffirm its resolution adopted at its meeting at Grand Rapids, Mich., last year, in support of the Shiras bill giving Federal control of boundary waters."

(3) *American Fisheries Society (1908).*—At its meeting held in Washington in 1908 the society unanimously adopted the following resolutions:

"Resolved, That the conclusion of a convention between the United States and Great Britain, by which the regulations of the fisheries of the contiguous waters of the United States and Canada will be assumed by the two Federal Governments, marks a distinct epoch in the history of American fisheries; and we pledge our official and personal efforts to facilitate the work of the International Fisheries Commission appointed under this convention."

(4) *International Fisheries Congress, 1908.*—The United States delegates to the Fourth International Fisheries Congress, held in Washington in 1908, expressed themselves on the question of Federal control as follows:

"The convention between Great Britain and the United States under which the regulation and administration of the fisheries of the boundary waters of the United States and Canada will be undertaken by the respective Federal Governments marks an epoch in the history of our fisheries. We pledge our support to all measures that, after proper investigation, are found to be necessary for the preservation of the fisheries of the waters in question."

(5) *North American Fish and Game Protective Association.*—The North American Fish and Game Protective Association, meeting at Albany, N. Y., in February, 1907, unanimously passed a similar resolution, strongly advocating Federal control of the fisheries in international waters.

(6) *Ohio Fish Commission.*—It is desirable that this department have some knowledge of the laws which will regulate fishing in Lake Erie, under the (international) arrangement, in order that any local legislation contemplated may conform to the national code.

At this season of the year the commercial fishermen are making up their nets for next year, and it is important that they be advised as to the devices which may be used and the size of the mesh authorized.

At a meeting of the commissioners on Tuesday evening I was directed to communicate with you on this subject and to request that, if possible, you supply us with information regarding changes which will affect the fishing interests of this State.

(John C. Speaks, chief warden, Ohio Fish and Game Commission, to United States Fish Commissioner Bowers, December 17, 1909.)

(7) *Minnesota Fish Commission*.—I am a great believer in Federal control of our international waters, not only for the propagation of the fish therein, but for the protection of the same, as I believe propagation and protection must go hand in hand if we accomplish the results we ought to. (Hon. Sam F. Fullerton, superintendent fisheries, St. Paul, Minn.)

(8) *Mr. August J. Anderson*.—I trust that the proposed regulations may soon become law, so that we can have time to prepare for next season's fishing. As the matter now stands it is not safe for us to order any netting, for fear next season the nets may not be lawful. I sincerely hope something can be done to protect our fishing industry. I believe in protecting our food fish. The fishermen have everything to gain. (August J. Anderson, fisherman, Marquette, Mich.)

(9) *Keystone Fishery Co.*—The regulations, as a whole, will prove immensely beneficial to the fishing industry, and we for our part would deprecate failure to enact a law which would make the same effective. (Keystone Fish Co., Erie, Pa.)

APPENDIX C.

Statement showing the prepared weight of salmon caught and marketed from the Puget Sound (Wash.) and Fraser River (British Columbia) districts, years 1899 to 1909.

| | Puget Sound. | Fraser River. |
|-----------|----------------|----------------|
| | <i>Pounds.</i> | <i>Pounds.</i> |
| 1899..... | 62,089,500 | 29,624,508 |
| 1900..... | 32,595,600 | 22,960,828 |
| 1901..... | | 57,716,231 |
| 1902..... | 48,719,632 | 26,353,742 |
| 1903..... | 43,467,424 | 18,939,626 |
| 1904..... | 44,875,056 | 20,397,529 |
| 1905..... | 63,894,768 | 40,655,904 |
| 1906..... | 36,768,896 | 23,329,152 |
| 1907..... | 45,507,840 | 18,849,568 |
| 1908..... | 31,790,720 | 9,750,582 |
| 1909..... | 83,649,264 | 36,245,824 |

NOTE.—The above represents the weight of the products as prepared for market. A considerable quantity of the Puget Sound salmon shown above would never have gone up the Fraser River, but there has been no way of separating this from the Fraser River run. About 80 per cent of the Puget Sound catch may be regarded as Fraser River fish.

APPENDIX D.

Personnel for enforcement of State fishery laws and regulations in international waters between the United States and Canada.

MAINE.

| | |
|---------------------------------|------------|
| 6 wardens, at \$600..... | \$3,600.00 |
| 6 boats and help, at \$450..... | 2,700.00 |
| Subsistence..... | 300.00 |
| | <hr/> |
| | 6,600.00 |

VERMONT.

| | |
|---|-------------|
| Number of wardens in State..... | 156 |
| Number concerned with Lakes Champlain and Memphremagog (international waters), estimated..... | 30 |
| Approximate annual expense..... | \$15,071.00 |
| Chargeable to international waters..... | 5,000.00 |

NEW YORK.

| | |
|--|-------------|
| For salaries of chief protector, 4 assistant chiefs, and 70 protectors... | \$59,075.75 |
| Expenses of same..... | 39,445.10 |
| Witness, court, attorney fees, and costs in prosecution and surveying..... | 18,281.75 |
| Maintenance and repairs, State launches..... | 265.64 |
| Printing and distribution of game laws..... | 3,376.65 |
| Printing and distribution of hunters' licenses..... | 2,358.56 |
| | <hr/> |
| | 122,803.45 |
| | <hr/> |
| Miscellaneous expenses, salaries of commissioners, clerical force, printing, etc..... | 32,152.09 |
| Of this \$32,152.09, based on a reasonable proportion, one-fifth of the \$32,152.09 would be for protection, or..... | 6,400.00 |
| | <hr/> |
| | 122,803.44 |
| | <hr/> |
| | 6,400.00 |
| | <hr/> |
| Total expense for enforcing fish and game laws..... | 129,203.44 |
| | <hr/> |
| Of this amount it is estimated that at least one-sixth should be charged to protection of the fisheries in international waters..... | 21,533.91 |

PENNSYLVANIA.

| | |
|---|----------|
| One steam tug, 70 feet long, the <i>Commodore Perry</i> , cost..... | 6,000.00 |
| | <hr/> |
| Annual cost of maintenance (regarded as insufficient)..... | 3,000.00 |
| Cost of additional wardens..... | 1,400.00 |
| | <hr/> |
| Total annual cost..... | 4,400.00 |

OHIO.

| | |
|--|-------------|
| Chief warden..... | 1 |
| Special warden..... | 1 |
| Deputy wardens..... | 12 |
| | <hr/> |
| 1 steam tug, <i>Oliver H. Perry</i> , cost..... | \$10,109.00 |
| 4 gasoline launches, cost, about..... | 500.00 |
| | <hr/> |
| | 10,609.00 |
| Maintenance: | |
| Salaries..... | 9,580.00 |
| Expenses..... | 8,000.00 |
| | <hr/> |
| | 17,580.00 |
| | <hr/> |
| Output of State hatcheries (whitefish, herring, pike, and pickerel): | |
| 1901..... | 50,000,000 |
| 1902..... | 40,000,000 |
| 1904..... | 30,000,000 |
| 1905..... | 35,000,000 |
| 1906..... | 25,000,000 |
| 1907..... | 100,000,000 |
| Present capacity of Put in Bay hatchery, 428,544,000 herring fry. | |

MICHIGAN.

| | |
|---|-------------|
| Salaries, about..... | \$15,000.00 |
| Expenses, about..... | 33,075.00 |
| | <hr/> |
| | 48,075.00 |
| Chargeable to international waters, at least..... | 25,000.00 |

WISCONSIN.

| | |
|---|-------------|
| Annual expenses, about | \$30,000.00 |
| Chargeable to international waters, about | 20,000.00 |

Output of hatcheries.

| | Whitefish. | Lake trout. | Wall-eyed pike. |
|------------|------------|-------------|--------------------|
| 1901 | 35,450,000 | 19,980,000 | 78,200,000 |
| 1902 | 66,820,000 | 17,877,000 | 37,325,000 |
| 1903 | 37,500,000 | 16,168,000 | 46,170,000 |
| 1904 | 20,375,000 | 20,462,000 | 37,825,000 |
| 1905 | 15,278,000 | 18,803,000 | 76,800,000 |
| 1906 | 53,780,000 | 16,107,000 | 79,140,000 |
| 1907 | 27,025,000 | 19,724,000 | 44,900,000 |
| 1908 | 12,210,000 | 12,345,000 | 112,075,000 |

MINNESOTA.

| | |
|--|-------------|
| Annual appropriation for 1909 | \$35,000.00 |
| Receipts from licenses, fines, and all other sources | 60,257.68 |
| Total expense of hatcheries, wardens, salaries, etc. | 86,972.92 |
| Chargeable to international waters, at least | 20,000.00 |

WASHINGTON.

| | |
|----------------|----------|
| Salaries | 5,100.00 |
| Expenses | 4,090.00 |
| | <hr/> |
| | 9,190.00 |

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